

What Is Claimed Is:

1. A method for detecting a malfunction of a brake system of a motor vehicle, in particular for detecting a malfunction of a wheel-pressure sensor suite of a brake system of a motor vehicle, in which at least two operating modes (170, 180) may be present during activation of the brake system,
 - a malfunction being detected in a first manner while a first operating mode (170) is present; and
 - a malfunction being detected in a second manner while a second operating mode (180) is present.
2. A method for operating a system (50) controlling and/or regulating the functions of a motor vehicle in which the control and/or regulation may be implemented at least as a function of the operating state of a brake system available in the motor vehicle, the operating state of the brake system being characterized by the variables (20, 22) utilized for operating the brake system; and
 - in response to a detected malfunction of the brake system, in particular to a detected malfunction of the wheel pressure sensor suite of the brake system, the dependency on the operating state of the brake system is at least reduced;
 - the malfunction being detected in a first manner when a first operating mode (170) of the brake system is present; and
 - the malfunction being detected in a second manner while a second operating mode (180) of the brake system is detected.
3. The method as recited in Claim 1 or 2, wherein the brake system is configured in such a way that braking interventions may be implemented independently of the wish of a driver of the motor vehicle; and

- the existence of the first operating mode (170) is detected when no wheel-individual braking intervention takes place during a braking operation; and
- the existence of the second operating mode (180) is detected when a wheel-individual braking intervention takes place during a braking operation.

4. The method as recited in Claim 1 or 2, wherein, during activation of the brake system, brake pressures at the wheel brakes are modified and the motor vehicle has at least one wheel axle and (p_{fr} (20), p_{fl} (22)) are detected, which represent the brake pressure at at least two wheel brakes of an axle, and a differential variable (Δp_{corr} (200, 300)) representing the difference of the detected wheel brake pressures is ascertained and the fault detection is implemented on the basis of the differential variable (250, 340) exceeding a differential threshold, it being provided in particular that the fault detection be implemented in a motor vehicle having at least two wheel axles, the fault detection being able to be executed separately at each wheel axle.

5. The method as recited in Claims 3 and 4, wherein the differential threshold assumes different values.

6. The method as recited in Claim 5, wherein, upon detection of the first operating mode, the different values for the differential threshold on the basis of the rate of increase of the brake pressure (205), averaged using all braking-pressure variables of an axle (235 through 245), are set, it being provided, in particular, that the rate of increase be ascertained by estimation with the aid of a differential quotient (210), the differential quotient being determined as a function of the difference of two averaged brake-pressure variables, recorded at different times, it being provided, in particular, that a maximum value (215) from at least two differential quotients be utilized to estimate the rate of increase.

7. The method as recited in one of the preceding claims, wherein the offset-corrected brakepressure variables ($p_{corr,n}$ (115)) are utilized as brake pressure variables, the offset (135) being estimated from the low-pass filtered brake-pressure signal (p_n (105)) of each individual wheel brake.

8. The method as recited in Claim 5, wherein a main brake cylinder is provided in the brake system to generate a brake admission pressure and, upon detection of the second operating mode (180), the value for the differential threshold is set as a function of

- an admission-pressure variable (p_a (30)) representing the admission pressure in the main brake cylinder; and
- the rate of increase, in particular of the differential quotient (gp_m (300)).

9. The method as recited in Claim 3, wherein, following a wheel-individual braking intervention, the fault detection is at least modified for a specifiable time duration, it being provided in particular that the fault detection be suspended for a specifiable time duration following a wheel-individual braking intervention.

10. A device for detecting a malfunction of a brake system of a motor vehicle, in particular for detecting a malfunction of a wheel-pressure sensor suite of a brake system of a motor vehicle, wherein at least two operating modes (170, 180) may be present during activation of the brake system, in which means are provided by which

- a malfunction is detected in a first manner when a first operating mode (170) is detected; and
- a malfunction is detected in a second manner when a second operating mode (180) is detected.

11. A device for operating a system (50) controlling and/or regulating the functions of a motor vehicle, in which

- the control and/or regulation may be implemented at least as a function of the operating state of a brake system present in the motor vehicle, in particular of a wheel pressure sensor suite present in the motor vehicle, the operating state of the brake system being characterized by the variables (p_{fr} (20), p_{fl} (22)) utilized for operating the brake system; and
- in response to a detected malfunction of the brake system the dependency on the operating state of the brake system is at least reduced, means being provided by which
- the malfunction is detected in a first manner when a first operating mode (170) of the brake system is present; and
- the malfunction is detected in a second manner when a second operating mode (180) of the brake system is determined.

12. The device as recited in Claim 10 or 11, wherein the brake system is configured in such a way that braking interventions are able to be implemented independently of the wish of the driver of the motor vehicle, and the means are configured in such a way that

- the presence of the first operating mode (170) is detected when no wheel-individual braking intervention takes place during a braking operation; and
- the presence of the second operating mode (180) is detected when a wheel-individual braking intervention takes place during a braking operation.

Summary

5 A method and a device for monitoring a brake system, in
particular a wheel pressure sensor suite of a brake system of
a motor vehicle are provided in which the fault detection
(block 10) is implemented on the basis of a differential
threshold (250, 340) being exceeded by a signal that is
representative for the difference of the brake pressures at
the individual wheel brakes of a wheel axle. In the process,
10 the differential threshold is set as a function of the
averaged rate of increase of the individual pressures at the
wheel brakes (235 through 245, 320 through 330). Fault
detection is carried out on the basis of a model, which takes
the instantaneous operating state of the brake system into
15 account.